PATENT

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

Title:	Method and system for extracting opinions from text documents"		
Applicants:	Reed et al.		
Attorney Docket No.:	ARC920030026US1		
Serial No.:	10/692,025	**Examiner:**	Michael C. Colucci
Filed:	October 22, 2003	**Art Unit:**	2626

Mail Stop: Board of Patent Appeals and Interferences
Commissioner for Patents
P.O.Box 1450
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APPEAL BRIEF

Dear Sir:

This appeal brief is submitted under 35 U.S.C. §134. This appeal is further to Appellants' Notice of Appeal filed July 2, 2008.

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(1) Real Party in Interest

The real party in interest is International Business Machines Corporation.

(2) Related Appeals and Interferences

No other appeals or interferences exist that relate to the present application or appeal.

(3) Status of Claims

Claims 10, 12, and 14-17 are pending and remain in the application. By the Final Office Action dated April 4, 2008, the Examiner has rejected claims 10, 12, and 14-17 under 35 U.S.C. § 103(a) as being unpatentable over Addison (U.S. Patent No. 6,865,533) (hereinafter "Addison" in view of Pertrushin (U.S. Patent No. 6,151,571) (hereinafter "Pertrushin"). All pending claims and all of the rejections are hereby appealed. A copy of the appealed claims is enclosed herewith as Appendix A.

(4) Status of Amendments

No amendments are outstanding.

(5) Summary of Claimed Subject Matter

Independent Claim 10

Independent claim 1 relates to a method for extracting opinions about a subject of interest from a text document having a plurality of sentences, where the subject is associated with a plurality of features, and where the method includes (1) extracting from the document feature terms related to the features most relevant to the subject, (2) for each sentence referring to a feature term, determining whether the sentence includes an opinion polarity about the feature term, and (3) for each sentence referring to the subject, determining whether the sentence includes an opinion polarity about the subject, where the determining includes (a) identifying opinion terms in the sentence using an opinion dictionary, each entry in the dictionary having an opinion term, a part-of-speech tag, and an associated opinion polarity,

(b) for each sentence having a feature term and an opinion term, parsing the sentence with an English parser to identify grammatical components in the sentence and relationships between said components, and (c) identifying an opinion polarity associated with said feature term using the opinion dictionary. (Please see Application as Filed, paragraphs 31-33, 37, 45, and 46.)

(6) Grounds of Rejection to be Reviewed on Appeal

The issue for review is whether claims 10, 12, and 14-17 are unpatentable over Addison in view of Pertrushin under 35 U.S.C. § 103(a).

(7) Argument

A. Introduction

The issue for review is whether claims 10, 12, and 14-17 are unpatentable over Addison in view of Pertrushin under 35 U.S.C. § 103(a).

B. Whether 10, 12, and 14-17 are unpatentable over Addison in view of Pertrushin under 35 U.S.C. § 103(a)

Applicants respectfully traverse the obviousness rejection claims 10, 12, and 14-17 are unpatentable over Addison in view of Pertrushin under 35 U.S.C. § 103(a), and submit that claims 10, 12, and 14-17 are not over Addison in view of Pertrushin under 35 U.S.C. § 103(a), and are patentable thereover. In support of this position, Applicants submit the following argument.

1. Legal Standards for Obviousness

The following legal authorities set the general standards in support of Applicant's position of non obviousness, with emphasis added for added clarity:

- MPEP §2143.03, "All Claim Limitations Must Be Taught or Suggested: To establish prima facie obviousness of a claimed invention, **all the claim limitations must be taught or suggested by the prior art**. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "**All words in a claim must be considered** in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim

depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)."

- MPEP §2143.01, "The Prior Art Must Suggest The Desirability Of The Claimed Invention: There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art." In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998) (**The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a prima facie case of obvious was held improper**.). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

- "**Obviousness cannot be established** by combining the teachings of the prior art to produce the claimed invention, **absent some teaching or suggestion** supporting the combination." In re Fine, 837 F.2d at 1075, 5 USPQ2d at 1598 (citing ACS Hosp. Sys. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)). **What a reference teaches** and whether it teaches toward or **away from the claimed invention** are questions of fact. See Raytheon Co. v. Roper Corp., 724 F.2d 951, 960-61, 220 USPQ 592, 599-600 (Fed. Cir. 1983), cert. denied, 469 U.S. 835, 83 L. Ed. 2d 69, 105 S. Ct. 127 (1984). "

- "When a rejection depends on a combination of prior art references, there must be **some teaching, suggestion, or motivation** to combine the references. See In re Geiger, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987)." Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention **where there is some teaching, suggestion, or motivation** to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See MPEP 2143.01; In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

- "With respect to core factual findings in a determination of patentability, however, the **Board cannot simply reach conclusions based on its own understanding or experience** -- or on its assessment of what would be basic knowledge or common sense. **Rather, the Board must point to some concrete evidence in the record** in support of these findings." See In re Zurko, 258 F.3d 1379 (Fed. Cir. 2001).

- "We have noted that **evidence of a suggestion, teaching, or motivation to combine** may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, see Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), Para-Ordinance Mfg. v. SGS Imports Intern., Inc., 73 F.3d 1085, 1088, 37

USPQ2d 1237, 1240 (Fed. Cir. 1995), although "the suggestion more often comes from the teachings of the pertinent references," Rouffet, 149 F.3d at 1355, 47 USPQ2d at 1456. The range of sources available, however, does not diminish the requirement for actual evidence. That is, **the showing must be clear and particular**. See, e.g., C.R. Bard, 157 F.3d at 1352, 48 USPQ2d at 1232. **Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence."** E.g., McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993) ("Mere denials and conclusory statements, however, are not sufficient to establish a genuine issue of material fact."); In re Sichert, 566 F.2d 1154, 1164, 196 USPQ 209, 217 (CCPA 1977)." See In re Dembiczak, 175 F. 3d 994 (Fed. Cir. 1999).

- "To prevent the use of hindsight based on the invention to defeat patentability of the invention, **this court requires the examiner to show a motivation to combine the references** that create the case of obviousness. In other words, **the examiner must show reasons** that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references **for combination in the manner claimed**." See In re Rouffet, 149, F.3d 1350 (Fed. Cir. 1998).

- The mere fact that references can be combined or modified does not render the resultant combination obvious **unless the prior art also suggests the desirability of the combination**. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, **there must be a suggestion or motivation in the reference** to do so." 916 F.2d at 682, 16 USPQ2d at 1432.). See also In re Fritch, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992) (flexible landscape edging device which is conformable to a ground surface of varying slope not suggested by combination of prior art references).

- If the **proposed modification would render the prior art invention being modified unsatisfactory** for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

2. Application of the Obviousness Standard to the Present Invention

By the Final Office Action dated April 4, 2008, the Examiner has rejected claims 10, 12, and 14-17 under 35 U.S.C. § 103(a) as being unpatentable over Addison in view of Pertrushin. In order to form a proper obviousness rejection of a claim under 35 U.S.C. § 103(a), a collection of references together must teach or suggest each element of the claim, including the relationships between the elements. If any element is not fully taught by the combined references, the rejection cannot be sustained.

Evaluating Addison in view of Pertrushin in this light, it is appropriate to examine the portions of Addison in view of Pertrushin that the Examiner has pointed to as teaching the claimed elements of the rejected claims.

Claims 10, 12, and 14-17

Claim 10

To the extent the Examiner's language at pages 11-13 of the Final Office Action can be understood, it appears that the Examiner has asserted the following correspondence between Addison and Pertrushin and claim 10:

Claim 10	**Addison**	**Pertrushin**
10. A method for extracting opinions about a subject of interest from a text document having a plurality of sentences, the subject associated with a plurality of features, the method comprising:	Addison does not teach this claim element.	Pertrushin does not teach this claim element.
extracting from the document feature terms related to the features *most relevant to the subject*;	Addison does not teach this claim element.	Pertrushin does not teach this claim element.
for each sentence referring to a feature term, determining whether the sentence includes an opinion polarity about the feature term; and	-	Pertrushin does not teach this claim element.
for each sentence referring to the *subject*,	Addison does not teach this claim element.	Pertrushin does not teach this claim element.

determining whether the sentence includes an opinion polarity about the *subject*, wherein the determining comprises *identifying opinion terms* in the sentence using an opinion dictionary, each entry in the dictionary having an *opinion term*, a part-of-speech tag, and an associated opinion polarity, for each sentence having a feature term and an *opinion term,* parsing the sentence with an English parser to identify grammatical components in the sentence and relationships between said components, and identifying an opinion polarity associated with said feature	Addison does not teach this claim feature. Addison does not teach this claim feature. Addison does not teach this claim feature.	Pertrushin does not teach this claim feature. Pertrushin does not teach this claim feature. Pertrushin does not teach this claim feature.

term using the *opinion dictionary.*		

In reviewing the cited portions of Addison and Pertrushin, however, it becomes apparent that Addison and Pertrushin have been generalized, and, in fact, do not support the position asserted by the Examiner.

extracting from the document feature terms related to the features *most relevant to the subject*

In particular, Addison and Pertrushin, alone or in combination, fail to teach or suggest "extracting from the document feature terms related to the features *most relevant to the subject*", as required by claim 10. Addison does not disclose relating feature terms to "the features *most relevant to the subject*". (See Addison, col. 12, lines 1-15.) In fact, Addison does not mention identifying or recognizing any particular subject or topic. Thus, Addison cannot teach or suggest "extracting from the document feature terms related to the features *most relevant to the subject*". Pertrushin also does not disclose relating feature terms to "the features *most relevant to the subject*". (See Pertrushin, col. 1, lines 39-57 and col. 13, lines 23-45.) In fact, Pertrushin does not mention identifying or recognizing any particular subject or topic. Thus, Pertrushin cannot teach or suggest "extracting from the document feature terms related to the features *most relevant to the subject*". Therefore, Addison and Pertrushin, alone or in combination, cannot teach or suggest the claim 10 element of "extracting from the document feature terms related to the features *most relevant to the subject*".

for each sentence referring to the *subject*, determining whether the sentence includes an opinion polarity about the *subject*

Also, Addison and Pertrushin, alone or in combination, fail to teach or suggest "for each sentence referring to the *subject*, determining whether the sentence includes an opinion polarity about the *subject*," as required by claim 10. Addison does not disclose identifying or recognizing any particular subject or topic. (See Addison, col. 12, lines 1-15 and col. 27, line 47 to col. 28, line 7.) Thus, Addison cannot teach or suggest "for each sentence referring to the *subject*, determining whether the sentence includes an opinion polarity about the *subject*".

Pertrushin also does not identifying or recognizing any particular subject or topic. (See Pertrushin, col. 1, lines 39-57 and col. 13, lines 23-45.) Thus, Pertrushin cannot teach or suggest "for each sentence referring to the *subject*, determining whether the sentence includes an opinion polarity about the *subject*". Therefore, Addison and Pertrushin, alone or in combination, cannot teach or suggest the claim 10 element of "for each sentence referring to the *subject*, determining whether the sentence includes an opinion polarity about the *subject*".

identifying opinion terms in the sentence using an opinion dictionary, each entry in the dictionary having an _opinion term_, a part-of-speech tag, and an associated opinion polarity

Further, Addison and Pertrushin, alone or in combination, fail to teach or suggest "*identifying opinion terms* in the sentence using an opinion dictionary, each entry in the dictionary having an *opinion term*, a part-of-speech tag, and an associated opinion polarity," as required by claim 10. The Examiner admitted that "Addison fails to teach a dictionary or similar table having an opinion term and an associated polarity." (See Office Action dated October 10, 2007, page 4.) Thus, Addison cannot teach or suggest "*identifying opinion terms* in the sentence using an opinion dictionary, each entry in the dictionary having an *opinion term*, a part-of-speech tag, and an associated opinion polarity". Although Pertrushin discloses "things", "connectors", "descriptors", and "logical connectors", Pertrushin does not disclose *identifying opinion terms* or a dictionary having an *opinion term*. (See Pertrushin, col. 58, line 42-54 and Figure 2.) Thus, Pertrushin cannot teach or suggest "*identifying opinion terms* in the sentence using an opinion dictionary, each entry in the dictionary having an *opinion term*, a part-of-speech tag, and an associated opinion polarity". Therefore, Addison and Pertrushin, alone or in combination, cannot teach or suggest the claim 10 element of "*identifying opinion terms* in the sentence using an opinion dictionary, each entry in the dictionary having an *opinion term*, a part-of-speech tag, and an associated opinion polarity".

for each sentence having a feature term and an _opinion term_, parsing the sentence with an English parser to identify grammatical components in the sentence and relationships between said components

In addition, Addison and Pertrushin, alone or in combination, fail to teach or suggest "for each sentence having a feature term and an *opinion term,* parsing the sentence with an English parser to identify grammatical components in the sentence and relationships between said components," as required by claim 10. Addison does not disclose or mention *opinion terms*. (See Addison, col. 7, line 56 to col. 8, line 15.) Thus, Addison cannot teach or suggest "for each sentence having a feature term and an *opinion term,* parsing the sentence with an English parser to identify grammatical components in the sentence and relationships between said components". Although Pertrushin discloses "things", "connectors", "descriptors", and "logical connectors", Pertrushin does not disclose *opinion terms*. (See Pertrushin, col. 58, line 42-54 and Figure 2.) Thus, Pertrushin cannot teach or suggest "for each sentence having a feature term and an *opinion term,* parsing the sentence with an English parser to identify grammatical components in the sentence and relationships between said components". Therefore, Addison and Pertrushin, alone or in combination, cannot teach or suggest the claim 10 element of "for each sentence having a feature term and an *opinion term,* parsing the sentence with an English parser to identify grammatical components in the sentence and relationships between said components".

identifying an opinion polarity associated with said feature term using the *opinion dictionary*

In addition, Addison and Pertrushin, alone or in combination, fail to teach or suggest "identifying an opinion polarity associated with said feature term using the *opinion dictionary*," as required by claim 10. The Examiner admitted that "Addison fails to teach a dictionary or similar table having an opinion term and an associated polarity." (See Office Action dated October 10, 2007, page 4.) Also, Addison does not disclose or mention *opinion terms*. (See Addison, col. 7, line 56 to col. 8, line 15.) Thus, Addison cannot teach or suggest "identifying an opinion polarity associated with said feature term using the *opinion dictionary*". Although Pertrushin discloses "things", "connectors", "descriptors", and "logical connectors", Pertrushin does not disclose *opinion terms*. (See Pertrushin, col. 58, line 42-54 and Figure 2.) Thus, Pertrushin cannot teach or suggest "identifying an opinion polarity associated with said feature term using the *opinion dictionary*". Therefore, Addison and

Pertrushin, alone or in combination, cannot teach or suggest the claim 10 element of "identifying an opinion polarity associated with said feature term using the *opinion dictionary*". It is therefore clear that Addison and Pertrushin, alone or in combination, cannot teach or suggest each element of claim 10 and, therefore, a rejection of claim 10 under 35 U.S.C. § 103(a) would be inappropriate.

Claim 12

Since dependent claim 12 depends on claim 10 and since Addison and Pertrushin, alone or in combination, cannot teach or suggest each element of claim 10, Addison and Pertrushin, alone or in combination, cannot teach or suggest each element of claim 12, and, therefore, a rejection of claim 12 under 35 U.S.C. § 103(a) is inappropriate.

Claims 14 and 15

Since dependent claims 14 and 15 depend on dependent claim 12 and since Addison and Pertrushin, alone or in combination, cannot teach or suggest each element of claim 12, Addison and Pertrushin, alone or in combination, cannot teach or suggest each element of claim 14 or claim 15, and, therefore, a rejection of claim 14 or claim 15 under 35 U.S.C. § 103(a) is inappropriate.

Claims 16 and 17

Since dependent claims 16 and 17 depend on dependent claim 15 and since Addison and Pertrushin, alone or in combination, cannot teach or suggest each element of claim 15, Addison and Pertrushin, alone or in combination, cannot teach or suggest each element of claim 16 or claim 17, and, therefore, a rejection of claim 16 or claim 17 under 35 U.S.C. § 103(a) is inappropriate.

CONCLUSION

All the claims presently on file in the present application are in condition for immediate allowance, and such action is respectfully requested. It is respectfully submitted

that the application has now been brought into a condition where allowance of the case is proper. Reconsideration and issuance of a Notice of Allowance are respectfully solicited.

Respectfully Submitted,

/Leonard T. Guzman/

Date: September 2, 2008

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APPENDIX A

CLAIMS APPENDIX

10. A method for extracting opinions about a subject of interest from a text document having a plurality of sentences, the subject associated with a plurality of features, the method comprising:

extracting from the document feature terms related to the features most relevant to the subject;

for each sentence referring to a feature term, determining whether the sentence includes an opinion polarity about the feature term; and

for each sentence referring to the subject, determining whether the sentence includes an opinion polarity about the subject, wherein the determining comprises

identifying opinion terms in the sentence using an opinion dictionary, each entry in the dictionary having an opinion term, a part-of-speech tag, and an associated opinion polarity,

for each sentence having a feature term and an opinion term, parsing the sentence with an English parser to identify grammatical components in the sentence and relationships between said components, and

identifying an opinion polarity associated with said feature term using the opinion dictionary.

12. The method as recited in claim 10, wherein the opinion polarity associated with the feature term is identified based on an opinion rule.

14. The method as recited in claim 12, wherein the rule base comprises a plurality of rules each having a relationship term, a target of the opinion, and a polarity of the opinion.

15. The method as recited in claim 12, wherein the rule base comprises a plurality of rules each having a relationship term, a source of the opinion, and a target of the opinion.

16. The method as recited in claim 15, wherein the target of the opinion is a component of the sentence to which the opinion is to be assigned.

17. The method as recited in claim 15, wherein the source of the opinion is a component of the sentence of which opinion polarity is to be assigned to the target.

APPENDIX B

EVIDENCE APPENDIX

There is no applicable evidence.

APPENDIX C

RELATED PROCEEDINGS APPENDIX

There are no related proceedings.